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NABL ACCREDITED AS PER ISO/IEC 17025:2005

Job No.: CECTC/BBMP/KRIDL/W.No.12/WMM/AIV/2017-18 **Date:** 08.08.2017

Aggregate Impact Value
IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, BBMP, Bangalore.
Name of the Work	Improvements to road & drain at Venkateshwara layout and Lakshmi layout in Ward No.12 Shettyhalli sub division, BBMP, Bangalore.
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	08.08.2017

Sl No.	Details	Trial No. 1	Trial No. 2	Trial No. 3	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	372	375	378	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	81	84	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	291	291	292	
4	Aggregate Impact value = percent fines 100* (W_2/W_1)%	21.77	22.40	22.75	**22.31**

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

Note:

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Job No.: CECTC/BBMP/KRIDL/W.No.12/WMM/GR/2017-18 Date : 08.08.2017

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, BBMP, Bangalore.

Name of Work : Improvements to road & drain at Venkateshwara layout and Lakshmi layout in Ward No.12 Shettyhalli sub division, BBMP, Bangalore.

Date of Testing : 08.08.2017

Material : Wet Mix Macadam

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **12155**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	450	450	3.7	96.3	95-100
22.4	4255	4705	38.7	61.3	60-80
11.2	2270	6975	57.4	42.6	40-60
4.75	1690	8665	71.3	28.7	25-40
2.36	1325	9990	82.2	17.8	15-30
0.600	1105	11095	91.3	8.7	8-22
0.075	750	11845	97.4	2.6	0-8

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Job No.: CECTC/BBMP/KRIDL/W.No.12/BM/QB/2017-18 Date: 22.08.2017

TEST REPORT

Client	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	:	**Technical Manager (West),** KRIDL, BBMP, Bangalore.
Name of the work	:	Improvements to road & drain at Venkateshwara layout and Lakshmi layout in Ward No.12 Shettyhalli sub division, BBMP, Bangalore.
Source of location	:	Hot mix Plant, Bangalore
Date of testing	:	22.08.2017

The results of the tests conducted on the bitumen sample using for Bituminous Macadam

Sl. No	Description	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	66	60 to 70
2	Softening point, ^{0}C	48	Min. 45
3	Ductility at 27^{0}C, cm	100 >	Min. 50
4	Flash Point, ^{0}C	299	Min. 220

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Job No.: CECTC/BBMP/KRIDL/W.No.12/BM/Shape/2017-18

Date: 22.08.2017

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, BBMP, Bangalore.
Name of Work	Improvements to road & drain at Venkateshwara layout and Lakshmi layout in Ward No.12 Shettyhalli sub division, BBMP, Bangalore.
Technical Reference	IS 2386(Part 1) 1963 (RA 2007)
Type of Mix	Bituminious Macadum
Date of Testing	22.08.2017

Passing through IS Sieve, mm	Retained On IS Sieve, mm	Weight of Sieved Fraction (W) gms		Proportion of Size range in the sample, X = 100xW/ΣW		Weight of 200 pieces of aggregates of the range, (P) in gms		Thickness gauge size, mm	Weight of flaky particles (F)in gms		Percentage by Weight of flaky aggregates in gms Y= 100xF/P	Weighed Percentage of flaky aggregates in gms XY=X × Y	Weight of fraction consisting of at least 200 Pieces in gms		Length gauge size in mm	Weight of aggregates in each fraction retained on Length gauge in gms	
63.00	50.00	W1		X1		P1		33.90	F1				P1		-	E1	
50.00	40.00	W2		X2		P2		27.00	F2				P2		81.00	E2	
40.00	31.50	W3		X3		P3		21.50	F3				P3		58.00	E3	
31.50	25.00	W4	3360.0	X4	32.69	P4	2280.0	16.95	F4	283.0	12.4	405.81	P4	-	-	E4	-
25.00	20.00	W5	2742.0	X5	26.68	P5	2056.0	13.50	F5	260.0	12.65	337.40	P5	2056.0	40.50	E5	247.0
20.00	16.00	W6	1630.0	X6	15.86	P6	1855.0	10.80	F6	220.0	11.86	188.10	P6	1855.0	32.40	E6	189.0
16.00	12.50	W7	1260.0	X7	12.26	P7	1230.0	8.55	F7	165.0	13.41	164.47	P7	1230.0	25.50	E7	120.0
12.50	10.00	W8	930.0	X8	9.05	P8	630.0	6.75	F8	149.0	23.65	214.02	P8	630.0	20.20	E8	86.0
10.00	6.30	W9	355.0	X9	3.45	P9	355.0	4.89	F9	66.0	18.59	64.22	P9	355.0	14.70	E9	64.0
		Σ W	**10277.0**									**ΣXY 1374.03**	**ΣP**	**6126.0**		**ΣE**	**706.0**

Flakiness Index = **13.74%**

Elongation Index = **11.52%**

Result : Combined Flakiness & Elongation index **25.26%**

Comments: Maximum allowable Combined flakiness and Elongation indices value for Bituminous Macadam is 35%.

Note:

→ The results indicated above are based on the tests carried out on the samples received in the laboratory.

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Job No.: CECTC/BBMP/KRIDL/W.No.12/BM/Sp.Gr/2017-18

22.08.2017

Specific Gravity And Water Absorption Test

IS: 2386 Part III

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, BBMP, Bangalore.
Name of the Work	Improvements to road & drain at Venkateshwara layout and Lakshmi layout in Ward No.12 Shettyhalli sub division, BBMP, Bangalore.
Source / Location	Hotmix Plant, Bangalore.
Type of Mix	Bituminous Macadam
Date of Testing	22.08.2017

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2030	2032	2036	
2	Weight of basket suspended in water	W_2 g	752	752	752	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1278	1280	1284	
4	Weight of saturated surface dry aggregate in air	W_3 g	2017	2018	2020	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	739	738	736	
6	Weight of oven dried aggregate	W_4 g	2006	2008	2009	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.714	2.721	2.730	2.722
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.755	2.758	2.771	2.763
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.55%	0.50%	0.55%	0.55%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Macadam is 2.0%

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